

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
10 October 2002 (10.10.2002)

PCT

(10) International Publication Number  
**WO 02/079270 A3**

(51) International Patent Classification<sup>7</sup>: **C08F 2/26**,  
210/02, C08J 3/00, D06M 15/227, C09D 123/08 // C08F  
218:08

(21) International Application Number: PCT/US02/06867

(22) International Filing Date: 6 March 2002 (06.03.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
09/823,318 30 March 2001 (30.03.2001) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,  
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN,  
YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG).

**Published:**

— with international search report

(88) Date of publication of the international search report:  
8 May 2003

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: HIGHLY FUNCTIONAL POLYMER LATEX

(57) Abstract: The present invention is directed to an ethylene-vinyl acetate emulsion polymer having at least 55 percent by weight of ethylene, which is water-dispersible, yet non-dispersible in an aqueous solutions containing 0.5 percent or more of an inorganic salts. The invention is also directed to salt sensitive emulsion polymers containing a water-dispersible polymer having a T<sub>g</sub> of less than 25 °C, which are non-dispersible in aqueous solutions containing 0.5 weight percent or more of an inorganic salt. The invention is also directed to an ethylene/vinyl acetate emulsion polymer having at least 55 percent by weight of ethylene, and a process for producing said emulsion polymer.

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## INTERNATIONAL SEARCH REPORT

Inter. I Application No

PC1/US 02/06867

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C08F2/26 C08F210/02 C08J3/00 D06M15/227 C09D123/08  
 //C08F218:08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08F D06M C09D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI            Derwent Publications Ltd., London, GB;            AN 1986-066563            XP002211761            &amp; JP 61 019678 A (CEMEDINE),            28 January 1986 (1986-01-28)            abstract</p>	1-3, 15-19
X	<p>DATABASE WPI            Derwent Publications Ltd., London, GB;            AN 1989-168401            XP002211762            &amp; JP 01 108236 A (MITSUBISHI            PETROCHEMICAL), 25 April 1989 (1989-04-25)            abstract</p>	1-3, 15-19

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

6 January 2003

Date of mailing of the international search report

24. 01. 2003

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Inter      I Application No  
PCI/US 02/06867

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 747 578 A (HESS STEFAN ET AL) 5 May 1998 (1998-05-05) column 3, line 31-35, 62-65; examples 1, 7 -----	15-21
X	EP 0 990 688 A (AIR PRODUCTS POLYMERS L P) 5 April 2000 (2000-04-05) examples 1-5 -----	15-19
X	US 3 692 723 A (GUNJIGAKE KOREAKI ET AL) 19 September 1972 (1972-09-19) column 2, line 40-62; example 1 -----	15-19

# INTERNATIONAL SEARCH REPORT

tional application No.  
PCT/US 02/06867

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:  
1-3, 15-21
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-3

as far as ethylene vinylacetate emulsions of a blend of ethylene-vinylacetate polymer (>55% vinylacetate) and a hydrophilic polymer colloid stabiliser comprising acidic groups are concerned

2. Claims: 4-14

as far as an aqueous emulsion comprising a water dispersible polymer of a glass transition temperature of <25 C of hydrophilic and, optionally, non-hydrophilic monomers are concerned

3. Claims: 15-19

as far as emulsions of an ethylene vinyl acetate polymer of >55% ethylene are concerned

4. Claims: 20-21

as far as a process of preparing an ethylene vinylacetate copolymer emulsion characterized by steps a), b) and c) is concerned

## INTERNATIONAL SEARCH REPORT

Information on patent family members

 International Application No  
 PCT/US 02/06867

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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JP 1108236	A	25-04-1989	JP 2064351 C JP 7098878 B	24-06-1996 25-10-1995
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